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HW--22265

DE91 001403

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By Authority of *R40-66-4*

A E Lyndon 10-11-90

R. B. B. 10/18/90
R. B. B. 10-18-90

1. J. T. Baker
2. C. W. Botsford
3. E. J. Filip
4. R. G. Clough
5. D. S. Lewis
6. S. L. Nelson
7. J. H. Warren
8. E. P. Lee - J. E. Main
700 Files
9. E. C. Wood
10. H. L. Mars
11. R. O. Mahann
12. G. E. McCullough - 300
13. P. C. Jerman
14. Pink
15. Yellow

September 28, 1951

To: File

From: W. N. Koop

REMOVAL OF RUPTURED URANIUM SLUG
FROM TUBE NO. 1288-B

SUMMARY

The 105-B Reactor was shut down at 2:00 PM on September 26, 1951 to effect the removal of a ruptured uranium slug from tube No. 1288-B. Removal was accomplished with the charging machine, using normal forces. The time required from shutdown to startup was twenty-two minutes, which was within the calculated recovery time of twenty-nine minutes. The production loss has been estimated to be 7.4 M.W.D.

DETECTION

The differential activity recorder in X Sample Room gave the first indication of increasing activity on crossheader 12 $\frac{1}{2}$. The Reactor was shut down when the analysis of the water from this crossheader revealed that the activity exceeded that of the water from adjacent crossheaders by a factor of three. There were no indications of the abnormal condition on any of the other monitoring devices. A survey of the rear pigtaile revealed a reading of 3 R/hr. at tube No. 1288-B.

SHUTDOWN, REMOVAL AND STARTUP

The operating level was reduced from 485 MW to 150 MW at a rate of 50 MW/min. and then the Reactor was scrammed with the #2 safety circuit. Immediately, under temperature monitoring control, the process water pressure was reduced from 400 psi to 200 psi. The pressure was then reduced on 12 $\frac{1}{2}$ crossheader to about 40" of head. A maximum tube temperature of 51°C was observed during the period this crossheader was at reduced pressure.

The charge was displaced with solid aluminum dummies, using the pneumatic charger with only normal pressures experienced. The tube was capped and the water pressure raised to 375 psi as rapidly as possible. Operation of the Reactor was resumed at 4:22 PM.

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PL 10-90

EFFLUENT

After the removal of the ruptured piece from tube No. 1288-B, samples from the retention and storage basins revealed only normal activity levels and the basins were continued in regular service.

DATA ON THE CHARGE

Tube 1288-B contained regular metal charged December 13, 1950. The tube was operating at 282 KW power level and had reached 77 % of current goal concentration.

The ruptured slug was the 28th piece from the front as determined by monitoring the piece discharged. It was a M2 type, canned November 7, 1950, processed on truck 12, line G and had been autoclaved.

EXAMINATION AND DISPOSAL

Examination of the slug revealed that the end cap was in the process of becoming separated from the remainder of the piece. The failure of the can wall at the end of the can lip had progressed about 90 % around the circumference of the slug.

The slug was canned and is being held in the 105-B storage basin awaiting transfer to 111-B for further examination.

W.N. 12/13/50
OPERATIONS UNIT
REACTOR SECTION

WNK:ym

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